

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-315827

(43)Date of publication of application : 14.11.2000

(51)Int.Cl.

H01L 41/09
B41J 2/045
B41J 2/055
B41J 2/16
H01L 41/22

(21)Application number : 2000-056138

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 01.03.2000

(72)Inventor : SUMI KOJI

NAKAMURA HARUO

OKA HIROSHI

NISHIWAKI MANABU

(30)Priority

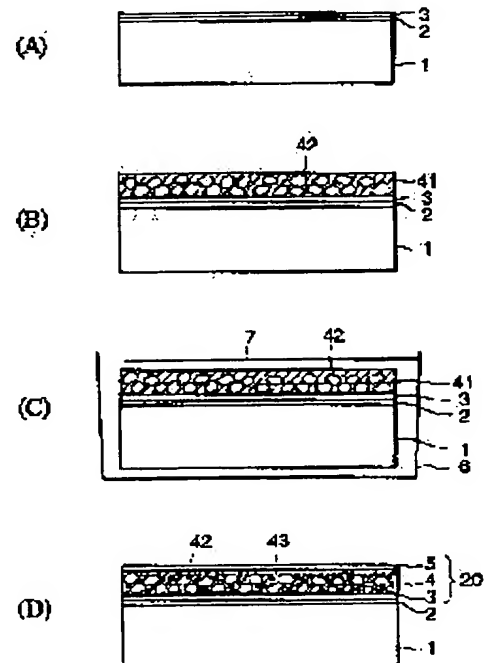
Priority number : 11053931 Priority date : 02.03.1999 Priority country : JP

(54) PIEZOELECTRIC ACTUATOR, INK-JET RECORDING HEAD, MANUFACTURE OF THEM AND INK-JET PRINTER

(57)Abstract:

PROBLEM TO BE SOLVED: To realize manufacture of a piezoelectric actuator by an application method under a low temperature environment, and to make a piezoelectric film thick, and to provide a piezoelectric film whose practical use is high by combining the advantages of a plural kinds of materials.

SOLUTION: In a piezoelectric actuator 20, equipped with a laminated structure constituted of an upper electrode 5, a piezoelectric film 4, and a lower electrode 3, the piezoelectric film 4 is constituted of a first piezoelectric ceramics particle group 42 and a second piezoelectric ceramics particle group 43. The size of each particle constituting the first piezoelectric ceramics particle group 42 is made larger than the



BEST AVAILABLE COPY
BEST AVAILABLE COPY